THE
ATMOSPHERIC RESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

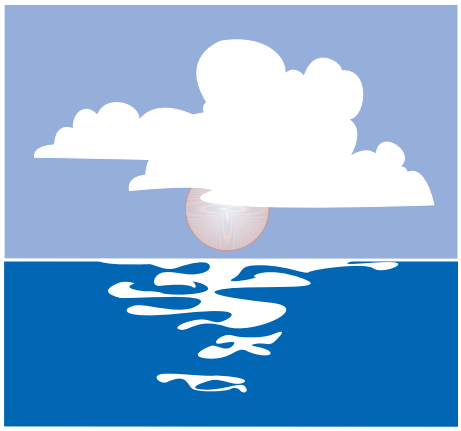
Water management & weather modification go hand-in-hand

By Aaron Gilstad

Cloud seeding and/or weather modification is a well established, viable science that is used throughout the world to accomplish an array of goals. In North Dakota hail suppression and rain enhancement are conducted primarily to protect agricultural areas from damage and increase the water available for crops grown in a semi-arid climate. In Alberta, Canada hail suppression is done to protect the cities of Calgary and Red Deer from damage. It is used in California, year round in some areas, to bolster water reserves which are then used to help regulate and stabilize hydroelectric power production.

When thinking of water shortages, the first area to come to mind is western North Dakota, which is facing another possible year of drought. After reaching a record high level of 1854.8 feet above mean sea level (amsl) in 1997 (only about seven and a half years ago), Lake Sakakawea is now at approximately 1808 feet amsl and hitting new record lows almost every day. We are by no means the only ones enduring this drought, which spreads all across the west. Wyoming and Montana, for example, have also been hard hit by the drought. But, what can be done about it? Water conservation efforts only help with the water that is already available; what is really needed is more water.

Both Wyoming and Montana are now looking to cloud seeding as an option for mitigating their drought



conditions. The Montana legislature now has a bill (HB399) being considered by their legislature, which will allow for wintertime, orographic seeding. Successfully seeding clouds to increase the snowpack in the Rocky Mountains would help ski resorts in the short term each year. In the long view, the inclusion of cloud seeding as part of a strong water management plan could help supplement water needs through the drought and improve total water availability.

Further south, the Wyoming legislature recently passed an omnibus water planning bill (HB0141). The bill budgeted $8.825 million over the next five years for weather modification research, operation, and evaluation in western and south central Wyoming. Wyoming is now in a unique position allowing the potential to conduct winter orographic seeding as well as summer rain enhancement and hail suppression operations. Adding cloud seeding to the Wyoming water management plan could be just the tool needed to better combat water shortages in the state, whatever the choice of operations.

The federal government is also giving weather modification another look in response to the National Academy of Sciences report supporting further study of cloud seeding and impending drought woes. Senator Kay Bailey Hutchison of Texas has recently introduced a bill (S.517) to create a national board to coordinate weather modification research and development. Senator Hutchison's bill would appropriate $10 million per year over the next ten years to support research in cloud seeding. This is a relatively small sum when compared to many other proposed bills, but it's a number that could make a huge difference in the science of weather modification.

Successful cloud seeding is still dependent on Mother Nature and can only be done when the right types of clouds are present, so it can not be counted on as a drought buster. When combined with other conservation efforts, however, cloud seeding can make a difference. No, cloud seeding is not a cure-all for drought, but it can definitely be used as a tool in a long range, progressive water management plan.

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